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ABSTRACT

Information was collected from 28 Chicano, 42 Chicana, 36 non-Chicano, and 52 non-Chicana students to identify reasons for Chicana attrition from the University of Southern Colorado. Information was also collected from 14 Chicanas who had already dropped out of college. Most of the data were collected at registration for spring semester, 1980. The study followed the initial sample through the semester and then determined their status as dropouts or persisters at the beginning of the subsequent semester. Demographic variables, academic background variables, and psychosocial variables were identified for investigation. Several psychosocial variables were identified that successfully discriminated males from females and Chicanos from non-Chicanos. Ethnic differences existed primarily in the areas of academic self-esteem and perceived treatment by teachers. Sex differences were represented by variables pertaining to social relationships and friends' academic expectations. Sex and ethnicity differences were found in the areas of parental income and family dependence. None of the variables were more than moderately associated with dropout status. There were no consistent findings among the dropouts on their feelings about the variables, but more than half mentioned finances as a reason for leaving. Appendices include the primary survey instrument, the dropout interview, descriptive findings, findings, and a literature review. (CM)

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Study of Attrition of Chicana Students at

The University of Southern Colorado

James Gutierrez

February 2, 1981

Introduction

This report summarizes the findings of a study of the reasons that Chicana students drop out of undergraduate programs at the University of Southern Colorado (USC). The major portion of the study's results were presented in a Preliminary Findings paper (June, 1980; included as Appendix I of this report). At the time of the preliminary report, it remained to determine which of the USC students who were included in the Spring 1980 sample failed to register for the Fall 1980 school term. This has now been done; reported below are results based on the additional and final variable of dropout vs. re-enroll.

For descriptions of procedures, instrumentation, and sampling, see Appendix I of this paper.

Results

At the Spring 1980 registration, the following sample of students was obtained (see next page):

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	Males	Females	Totals
Hispanic	n=24 %18%	n=38 %29%	n=62 %47%
Non-Hispanic	n=24 %18%	n=45 %34%	n=69 %53%
Totals	n=48 %36%	n=83 %63%	N=131

At the Fall 1980 registration, the students from the original sample who re-enrolled were distributed as follows:

	Males	Females	Totals
Hispanic	n=16 %20	n=26 %32%	n=42 %52
Non-Hispanic	n=10 %13 n=26 %33	n=28 %35% n=54 %67	n=38 %48

In terms of rate of dropout (calculated as: $\frac{n_{\text{Spring}} - n_{\text{Fall}}}{n_{\text{Spring}}}$),

the following data were obtained:

Male Hispanics: 33% dropout
 Female Hispanics: 32% dropout
 Male Non-Hispanics: 58% dropout
 Female Non-Hispanics: 38% dropout

The dropout rate for Chicanas is apparently lower than that of any other group. Four explanations occur that are alternative to the conclusion that Chicanas evidence the lowest dropout rate in the population.

1) The data represent a temporary aberration in the overall pattern of dropout in the USC student population; that is, the findings lack temporal external validity. A long term study, over several years, coupled with a retrospective analysis of several prior years, would be necessary to establish this possibility.

2) The data reflect the results of intensive provision of services to selected segments of the student body. Again, a post-facto analysis of dropout patterns over several years might confirm or disconfirm this explanation.

3) The self-selection (students could and some did refuse to respond) involved in the study might have affected the results: a selection by arrangements (or selection by some other threat) interaction might have predisposed Chicanas who were less at-risk than other students to respond. There exists no good way to assess this possibility.

4) Sampling error accounts for a possible discrepancy between population and sample dropout rates. The way to check for this discrepancy is to check registration of individual members of the student population from Spring 1980 to Fall 1980. We do not now have such an analysis at our disposal; it is quite expensive in terms of computer time, and USC apparently does not perform such an analysis routinely. We can, however, report data on total student body composition as freshmen, sophomores, juniors and seniors in terms of sex and ethnicity:

Percent of total student body (excluding foreign, Asian and American Indian) who are:

Anglo males	38	38	40	44
Anglo females	30	34	39	34
Hispanic males	10	11	7	10
Hispanic females	15	13	10	8
Black males	4	2	3	3
Black females	3	2	2	1
	Freshmen	Sophomores	Juniors	Seniors

This data is suspect vis-a-vis dropout-retention because the number of students who are not constantly enrolled from one semester to the next is unknown. It is apparent, however, that Chicanas do evidence a gradual decline in their proportional representation in the student body over a four-year period. This could, of course, also be due to steadily increasing numbers of Chicanas enrolling as freshmen, and persisting. This data does suggest that sampling error or bias may have occurred, but it is far from conclusive. Conclusive evidence would consist of a population dropout analysis for Spring and Fall, 1980.

Characteristics of dropouts vs. persisters

None of the variables included in the questionnaire proved to be more than moderately associated with dropout status. The following variables evidenced some slight relationship to re-enrollment:

<u>Variable</u>	<u>Dropout - Re-enroll in Standard Deviations</u>
Greater feelings of competency as learner	.33s
Greater parental income	.24s
Facility with language other than English	.22s
Highest grade in school achieved by mother	.20s
Greater self concept as learner	.18s

The following table suggests that there is little evidence for a relationship between marital status and dropout status:

	Single	Married	Separated, Divorced or Widowed
Dropped Out	48 (31%)	18 (12%)	7 (5%)
Re-enrolled	54 (35%)	18 (12%)	8 (5%)

Prediction of dropout potential

A discriminant function analysis was performed, using those questionnaire variables that seemed to be associated univariately with dropout status. To maximize power, a stepwise solution was employed using Wilks' lambda as the criterion for inclusion; that is, a variable is entered only if the partial multivariate F-ratio for its contribution to the difference between group centroids is significant. Of course, error-fitting is something of a problem with the procedure.

The discriminant function obtained is statistically significant ($p=.052$; $\lambda=.937$; $df=4$) but hardly substantively significant. The following table summarizes the classification analysis:

<u>Actual Group</u>	<u>Predicted Group</u>	
	Dropped out	Re-enrolled
Dropped out	42%	58%
Re-enrolled	31%	69%

Percent of cases correctly classified: 56%

Fifty-six percent is little better than a coin flip. It does not appear that the prediction equation is useful for determining those students most likely to drop out.

Full descriptive statistics, analyzing the relationship between dropout status and other variables are found in Appendix 2.

Variable: AGE

	Mean	Std. Dev.	N
Dropped Out	23.342	5.779	73
Re-enrolled	24.412	3.504	80

Variable: HIGHEST GRADE COMPLETED BY FATHER

	Mean	Std. Dev.	N
Dropped Out	6.644	5.448	73
Re-enrolled	6.612	5.108	80

Variable: HIGHEST GRADE COMPLETED BY MOTHER

	Mean	Std. Dev.	N
Dropped Out	3.603	4.660	73
Re-enrolled	7.650	4.984	80

Variable: AT WHAT LEVEL DO YOU SPEAK THAT LANGUAGE?

	Mean	Std. Dev.	N
Dropped Out	1.301	1.713	73
Re-enrolled	1.688	1.747	80

Variable: PARENTS' ANNUAL INCOME TO NEAREST \$1000

1=\$0-5,000 2=\$6,000-10,000 3=\$11,000-15,000
4=\$16,000-20,000 5=\$21,000-25,000 6=\$30,000+

	Mean	Std. Dev.	N
Dropped Out	2.644	1.836	73
Re-enrolled	3.087	1.864	80

Variable: STUDENT'S TOTAL MONTHLY INCOME

1=\$100-200 2=\$201-400 3=\$401-600 4=\$601-800
5=\$801-1,000 6=Over 1,000

	Mean	Std. Dev.	N
Dropped Out	1.932	1.447	73
Re-enrolled	2.037	1.488	80

Variable: ADEQUACY OF INCOME
More than enough 1 2 3 4 Not enough

	Mean	Std. Dev.	N
Dropped Out	2.616	.981	73
Re-enrolled	2.612	1.061	80

Variable: HOURS PER WEEK ON THE JOB
1=0-10 2=11-20 3=21-30 4=31-40 5=40+

	Mean	Std. Dev.	N
Dropped Out	1.322	1.553	73
Re-enrolled	1.675	1.357	80

Variable: LEARNER SELF CONCEPT
Higher is worse

	Mean	Std. Dev.	N
Dropped Out	2.517	.674	73
Re-enrolled	2.400	.652	80

Variable: HOW TEACHERS TREAT STUDENTS
Higher is worse

	Mean	Std. Dev.	N
Dropped Out	2.535	.573	71
Re-enrolled	2.494	.600	77

Variable: DIFFERENTIAL TREATMENT DUE TO ETHNICITY
Higher is more difference

	Mean	Std. Dev.	N
Dropped Out	2.555	.982	68
Re-enrolled	2.647	.731	80

Variable: ADVANTAGES DUE TO DIFFERENTIAL TREATMENT
Higher is more disadvantageous

	Mean	Std. Dev.	N
Dropped Out	2.974	.386	67
Re-enrolled	2.373	.750	77

Variable: AMOUNT OF ANXIETY
Higher is more anxious

	Mean	Std. Dev.	N
Dropped Out	1.495	.315	73
Re-enrolled	1.475	.342	79

Variable: LEARNER COMPETENCY
Higher is worse

	Mean	Std. Dev.	N
Dropped Out	2.081	.480	70
Re-enrolled	1.920	.490	79

Variable: GRADES RECEIVED BY MALES
Higher is worse

	Mean	Std. Dev.	N
Dropped Out	2.224	.671	61
Re-enrolled	2.199	.487	72

Variable: GRADES RECEIVED BY FEMALES
Higher is worse

	Mean	Std. Dev.	N
Dropped Out	2.033	.576	61
Re-enrolled	2.037	.505	72

Variable: GRADES RECEIVED BY ANGLOS
Higher is worse

	Mean	Std. Dev.	N
Dropped Out	1.918	.770	61
Re-enrolled	1.375	.680	72

Variable: GRADES RECEIVED BY MINORITIES
Higher is worse

	Mean	Std. Dev.	N
Dropped Out	2.377	.717	61
Re-enrolled	2.417	.697	72

Variable: HOW OFTEN USE ON-CAMPUS SERVICES
Higher=seldom

	Mean	Std. Dev.	N
Dropped Out	14.335	11.461	73
Re-enrolled	17.555	13.733	80

Variable: HOW SATISFIED WITH ON-CAMPUS SERVICES
Higher=less satisfied

	Mean	Std. Dev.	N
Dropped Out	1.776	.393	73
Re-enrolled	1.723	.374	80

Variable: HOW OFTEN USE OFF-CAMPUS OFFICES AND RESOURCES
Higher=seldom

	Mean	Std. Dev.	N
Dropped Out	10.042	12.750	73
Re-enrolled	13.232	16.757	80

Variable: HOW SATISFIED WITH OFF-CAMPUS OFFICES AND SERVICES
Higher=less satisfied

	Mean	Std. Dev.	N
Dropped Out	1.954	.246	73
Re-enrolled	1.907	.373	80

<u>Fall Enrollment</u>	<u>All Classes</u>			<u>Seniors</u>		
	<u>Chicanos</u>	<u>All Women</u>	<u>Total</u>	<u>Chicanos</u>	<u>All Women</u>	<u>Total</u>
1975	478	2,267	5,972	51	281	791
1976	505	2,273	5,560	47	254	754
1977	429	2,254	5,254	53	320	761
1978	453	2,145	5,000	59	307	733

<u>Graduates</u>	<u>AA</u>	<u>AAS</u>	<u>BA</u>	<u>BS</u>	<u>MAT</u>	<u>Total</u>
1975-1976						
Chicanas	23	9	15	22	1	70
All Women	79	41	86	123	20	349
All Students	100	162	162	434	25	883
1976-1977						
Chicanas	25	8	13	22	-0-	68
All Women	84	49	77	125	14	349
All Students	102	141	142	456	28	869
1977-1978						
Chicanas	5	7	15	25	-0-	52
All Women	59	54	77	157	10	357
All Students	77	143	139	448	20	827

Source: Academic Affairs

file with original

Preliminary Findings
Study of Attrition of Chicana Students at
The University of Southern Colorado

McREL

June 30, 1980



Rationale for the Study

In June, 1978, Sallie Watkins, Vice-President for Research at the University of Southern Colorado (USC) reported to McREL that the attrition rate among Chicana students at that institution was approximately 70%--an insupportably high figure. McREL was requested to support a study of the reasons for this attrition. As a result of this request, and of a conference on women's issues sponsored by McREL in September 1978, McREL agreed to support the study, both to enable USC to better deal with policy variables that might reduce the attrition rate, and to seek out variables (possibly non-manipulable) that might explain the rate.

Procedure

During the fall of 1979, relevant literature was reviewed and discussions were held with Hispanic researchers from our region who had studied problems facing Hispanics in higher educational institutions. An advisory panel was formed; it consisted of male and female Hispanics who were professionally involved with providing institutional services to college students, and who had previously carried out research on the problem of minority attrition at HEIs. Conferences among these consultants and McREL resulted in the formal literature review (Appendix D), review of instrumentation and assistance with design.

Because the target group of the study was both female and Hispanic, a two-factor design was planned, consisting of ethnicity (Chicano and non-Chicano) and sex (male and female). In order to avoid methodological problems such as post-treatment sensitization and more practical problems such as locating students subsequent to dropout, it was decided that the primary data collection occur at registration for the spring semester, 1980. Our plan was, and is, to involve students who had not yet dropped out. We would follow this initial sample through one semester of attendance, and then determine their status as dropouts or persisters at the beginning of the subsequent semester. We also collected data from Chicanas who had already dropped out of USC; see below for a description of this data.

Most of the data reported in this paper was collected at the beginning of Spring semester 1980, although a few questionnaires were administered later to obtain a sufficiently representative sample. Information was collected from 28 Chicanos, 42 Chicanas, 36 non-Chicanos, and 52 non-Chicanas. This information has been analyzed (see Results) from the perspective of making inferences about ways in which the Chicana sub-population is different from the other three subgroups.

We are awaiting information about specifically which of the sample fails to register for Fall semester. At that point we will be able to derive a prediction model based on discriminant function analysis, that will point to any variables, directly actionable or not, that are associated with subsequent student attrition.

For purposes of immediate comparison with the larger sample, a further set of data has been collected from Chicanas who had already

dropped out of USC prior to January 1980. This data is not as methodologically strong as that obtained from the primary sample. One problem is that they had already dropped out when they were interviewed; thus, their self-reports of attitudes and experiences at USC may well be confounded both by the act of having spent at least one semester in enrollment and by that of leaving that University. Further, the problems raised by non-random subject selection are intractable when compared with the alternative--here, random selection of primary respondents. Nevertheless, it seemed important to develop our insight into qualitative differences between Chicana dropouts and other students. Thirty-three Chicana dropouts were identified by inspection of USC records, of whom 14 agreed to be interviewed.

Instrumentation

Based on the literature review (Vasquez, 1979; see Appendix D) three clusters of variables were identified for investigation: demographic variables (sex, language and culture, socioeconomic status, geographic location* and size* of high school), academic background variables (high school GPA*, standardized test scores*, high school rank* and academic preparation*,) and psychosocial variables (self-esteem, feelings of stress, support from others and social integration).

The primary instrument is attached to this report as Appendix A. Table I identifies the specific items on that instrument with the research variables of interest.

* These variables are to be measured by inspection of University records, in order to minimize questionnaire length and to objectify the measurement.

Table I

<u>Variable</u>		
<u>Demographic variables</u>	<u>Page</u>	<u>Item #</u>
Ethnicity	1	1
Sex	1	2
Family information	1	4,5
Socio-economic status	1	7,8,9,10
	2	1-4
	3	5,6
Age	1	6
Academic information	1	11,12
	7	7
Language	1	13,14
<u>Psychosocial variables</u>		
Support from others	3	1(1-17), 2(1-15)
	4	3-5
Feelings of stress	5	1-15
Academic self-esteem	6	1-4
	7	9
Academic style	6	5,6
Expectations of others	7	8(1-9)
Treatment by teachers	7	9-12
	8	13-15
Feelings about ethnic background	8	16-19
Support from agencies and services	10	1-24
	11	1-15

In addition, an oral interview protocol was developed for use with the Chicana dropouts (Appendix B). The correspondence of its items with the research variables is presented in Table II.

Table II

<u>Variable</u>	<u>Item #</u>
<u>Demographic variables</u>	
Family and geographic background	1-5
Occupational information	18
Support from USC	23-24, 25, 26, 29
Reasons for and issues concerning withdrawal from USC	28, 30-32
<u>Academic variables</u>	
Academic background (respondent)	6-14
Academic background (friends)	15-17
Academic expectations	31-32, 20-22, 27

The Chicana dropouts also completed the primary survey questionnaire.

Results

A. Primary questionnaire; psychosocial and academic style variables

A number of statistically and substantively significant differences between attitudes of Chicanos and non-Chicanos were located (descriptive and inferential analyses are found in Appendix C). In particular:

1. Female Chicanas reported poorer self-esteem as a learner than any other group.
2. Chicanos in general felt that teachers treat students more poorly than did non-Chicanos.
3. Chicanos in general felt that their ethnic background makes more of a difference to teachers, other students, and USC service agencies than do non-Chicanos.
4. Chicanos in general felt that teachers give higher grades to non-Chicanos, and lower grades to Chicanos, than did non-Chicanos.

There are two types of negative findings:

1. Respondent's sex made a difference only on self-concept as a learner, and then only among Chicanos. On no other psycho-social variable was there a significant difference between males and females.
2. Variables on which there was no difference between Chicanos and non-Chicanos include:
 1. Advantageousness of ethnic background
 2. Feelings of stress

3. Academic style
4. Grades received by males
5. Grades received by females

We found no differences between Chicanas and other groups on language variables. About half the Chicanas, as with other respondents, reported that they speak a language other than English; and the reported fluency in that language was roughly equivalent across all four groups.

Demographic and personal support variables

Differences on the basis of ethnicity were found on parents' income, highest grade in school completed by father and highest grade completed by mother. Non-Chicanos reported higher parental income levels and higher grades completed by parents. No differences on the basis of sex or ethnicity were found on student's income, number of dependents or respondent's age.

On the other hand, several differences were found on the basis of sex among variables pertaining to social relationships. Men consistently reported having had more friends who had attended USC.

Sex differences also appear in the importance of graduation variable: men report that it is less important to their friends that they graduate from USC than do women. Evidently there is greater social support from friends for women to persist to a bachelors degree than for men.

Finally, sex differences are also present in the questions on support from family, but here they are combined with differences due to ethnicity. There is, in other words, an interaction between the two variables; it is represented graphically in Figure 1 and Figure 2:

Figure 1: Interaction between sex and ethnicity measured by support from family members.

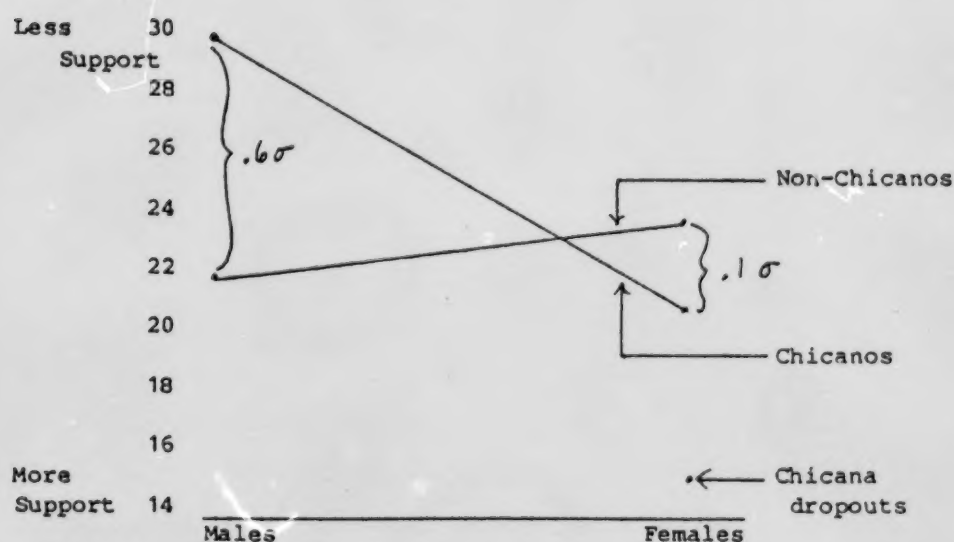
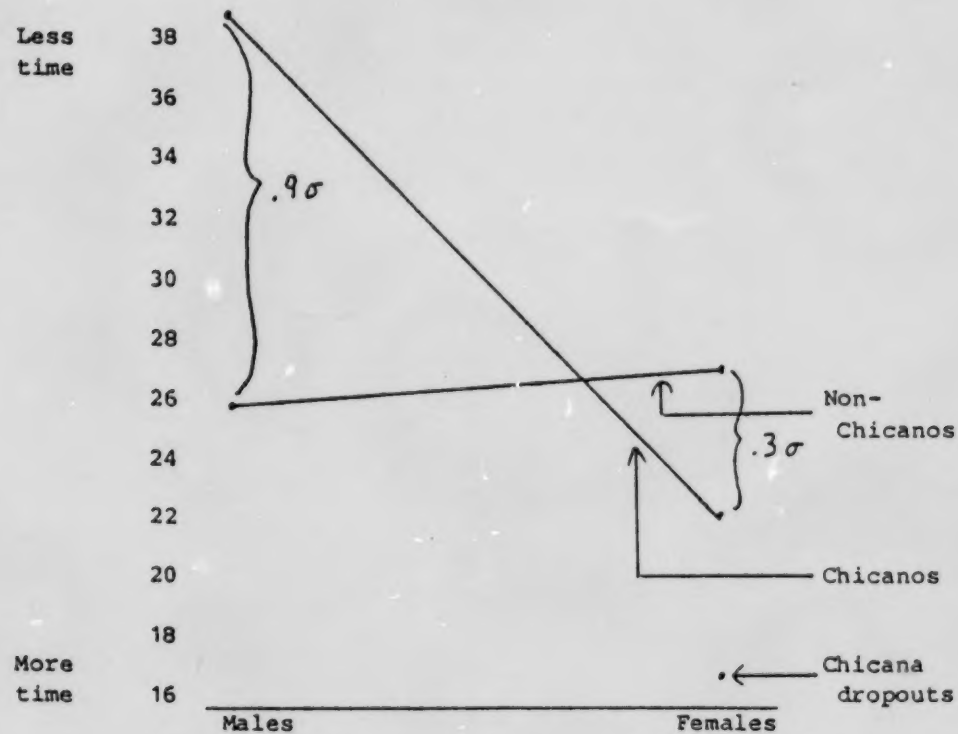


Figure 2:

Interaction of sex and ethnicity as measured by time spent with family members.



The following comments hold true both of support from and time spent with family members. There is a trivial difference between non-Chicano men and women. There are very large (.74σ and 1.3σ) differences between Chicanos and Chicanas. Chicanos report receiving much less support, and spending much less time, with their family members than do Chicanas. Furthermore, Chicanas report more support from and time spent with family than do non-Chicano females.

It would appear that Chicanas are under a set of conflicting social forces vis-a-vis their college attendance. On one hand, women's friends see their graduation from college as more important than do the friends of men--a push for women to persist. On the other hand, Chicanas rely much more on their families than they do on other social/educational contacts. So the opportunity for friends to influence them to persist in college is fairly weak, compared with the force of that influence. Chicanas' parents have generally fewer years of schooling than do the parents of non-Chicanos; familial role-modeling may not encourage them to persist, although we have no evidence that suggest that such modeling discourages them.

We also asked students their frequency of use, and satisfaction with, various student services available on campus, and social organizations located off campus. No differences among groups of students were found; in general, reported frequency of use appears quite low (and therefore no basis to judge satisfaction). See Appendix C for specific findings.

B. Intermediate findings based on interviews with Chicana dropouts.

The following findings must be viewed very tentatively inasmuch as the information was gathered ex post facto and from a very small (n=14) sample of dropouts.

In general, we found no meaningful differences between Chicana dropouts and Chicana students on the variables measured on the primary survey instrument. Thus most of the statements about sex and ethnicity differences made above apply to dropouts as well as students. The exceptions were in the areas of family variables: dropouts reported slightly lower parental income than Chicana students; and dropouts reported more family support and time spent with family than did Chicana students; both differences represent about .45σ.

It would appear that the variables that most clearly distinguish Chicanas from the other three categories operate even more strongly for Chicana dropouts: Chicanas depend on their families relatively more than do Chicanos and other ethnic groups; Chicana dropouts depend on their families even more than do Chicana students. If we were to posit a concomitant relationship between family dependence and school persistence (and we cannot make this inference yet for the methodological reasons described above) we would conclude that the Chicanas who do not drop out are more resistant to whatever effect family ties have on attrition. We will know more when we have learned which of our student sample fail to register for classes in September.

Other questions asked of dropouts

We found no concentration of students from small, rural communities among the group of dropouts; in fact, most of them lived in and attended school in Pueblo. Pueblo is the fourth largest municipality in Colorado, and students in its schools consistently score at or above the national median on standardized tests.

There were no consistent findings among the dropouts on their feelings about high school, school subjects, friends' educational experiences, work experience, encouragement/discouragement to attend college, or problems related to entry and registration.

With one exception, each dropout did state that she did not receive sufficient financial assistance, and more than half mentioned finances as a reason for leaving.

It is interesting to note the reasons cited for enrollment by the dropouts; typical were: "My friends were there;" "I grew up in Pueblo;" "Nothing else to do;" "I wanted to try college;" "It was close to home;" and "I was tired of working."

As reasons to attend college, these do not seem at all clearly formed. Of course, few first-year students have firm notions about their reasons for attending college, and those that do often lose sight of them. But these seem to be peculiarly passive reasons. Conceivably, when combined with the necessity and opportunity for more money, passive reasons become insufficient, and dropping out becomes a natural course of action.

Conclusions

Several psychosocial variables were identified that successfully discriminate males from females and Chicanos from non-Chicanos. Ethnic differences exist primarily in the areas of academic self-esteem and perceived treatment by teachers. Sex differences are represented by variables pertaining to social relationships and friends' academic expectations. Sex and ethnicity differences are found in the areas of

parental income and family dependence.

Accepting for the moment that the high attrition rate among Chicanas is associated with variables that are related to being female and Chicana, some hypotheses are plausible. If:

1. Chicanos at USC in general have a lower academic self-esteem than non-Chicanos;
2. Chicanos at USC in general feel that teachers could be more concerned about students;
3. Chicanos of USC in general feel that teachers give higher marks to non-Chicanos;
4. Chicanos at USC in general feel that their ethnic background makes a difference to the predominantly Anglo faculty and staff;
5. Chicanos at USC in general have a lower family income than non-Chicanos;
6. Parents of Chicanos at USC have completed fewer years of schooling than parents of non-Chicanos;
7. Women in general have fewer friends who are/were in attendance at USC;
8. Women's friends are more supportive of persisting than are men's friends, but have less opportunity to provide that support;
9. Chicanas depend more heavily on their families for support, and spend more time with them, than do male Chicanos or non-Chicanos;

then we would expect a configuration of effects to be non-supportive of Chicana persistence. That is, a combination of affective factors (self-esteem and feelings of mistreatment at the school, feelings of support from and dependence on the family), social/financial factors (lower parental income and educational level, fewer friends at USC) may well make persisting an unattractive option. When combined with academic variables (to be analyzed on clearance from USC), we may find a combination of variables that both explain and predict likelihood of dropout.

APPENDIX A

Primary Survey Instrument

STUDENT SURVEY -- USC

The University of Southern Colorado has supported our research to develop a student profile. With the help of our research assistant, would you take some time to fill out this questionnaire?

PERSONAL INFORMATION

1. Ethnicity Black 1 Anglo 2 Chicano/Mexican-American 3
 Asian 4 Native-American 5 Other (specify) 6
2. Student's sex Male 1 Female 2
3. Social Security No. _____
4. Marital Status: Single Married Separated Divorced Widowed
 1 2 3 4 5
5. Number of dependents: _____
6. Present age _____
7. Father's occupation _____
8. Mother's occupation _____
9. Highest grade completed by father _____
10. Highest grade completed by mother _____

ACADEMIC INFORMATION

11. Current year at USC: First 1 Second 2 Third 3 Fourth 4 Fifth 5
12. Major field of study _____
13. Do you speak a language other than English? Yes 1 No 2
14. Which language? German 1 Spanish 2 Italian 3 Croation 4 Slovenian 5
 Other 6

15. At what level do you speak that language?

Beginner 1 Superficial knowledge 2 Function adequately 3

Fairly good knowledge 4 Speak proficiently 5

INCOME

1. Parents' annual income to nearest \$1000.

\$0 - 5,000 1 \$6,000 - 10,000 2 \$11,000 - 15,000 3 \$16,000 - 20,000 4

\$21,000 - 25,000 5 \$30,000+ 6

2. Student's total monthly take-home combined income (all sources).

\$100 - 200 1 \$201 - 400 2 \$401 - 600 3 \$601 - 800 4 \$801 - 1,000 5

Over 1,000 6

3. Percent of monthly income spent on: (Total should equal 100%)

Food %

Housing %

Clothing %

Education %

Transportation %

Entertainment %

Child care %

Other %

4. Adequacy of income: More than enough 1 Just enough 2 Less than enough 3

Not enough 4

5. Occupation other than that of being a student _____
6. Hours per week on the job 0-10 1 11-20 2 21-30 3 31-40 4 40+ 5

SOCIAL INFORMATION

1. Please prioritize the following people in terms of the support and help they give you. (1 = Most supportive, 17 = Least supportive). Use each number only once.

____ Mother
____ Father
____ Brother(s)
____ Sister(s)
____ Spouse
____ Son(s)
____ Daughter(s)
____ Fellow male student(s)
____ Fellow female student(s)
____ Fellow male friend(s) who do not attend USC
____ Fellow female friend(s) who do not attend USC
____ Male person(s) you work with
____ Female person(s) you work with
____ Male person(s) in organizations (church, community groups) you belong to
____ Female person(s) in organizations (church, community groups) you belong to
____ Male faculty or academic advisor
____ Female faculty or academic advisor

2. Please prioritize the following people in terms of the amount of time you spend with them outside of class. (1 = Most time, 15 = Least time). Use each number only once.

____ Mother
____ Father
____ Brother(s)
____ Sister(s)
____ Spouse
____ Son(s)
____ Daughter(s)
____ Male fellow student(s)
____ Female fellow student(s)
____ Male friend(s) who do not attend USC
____ Female friend(s) who do not attend USC
____ Male person(s) you work with
____ Female person(s) you work with
____ Male person(s) in organization you belong to
____ Female person(s) in organization you belong to

3. How many friends do you have in each of these categories who attend USC and have since dropped out of USC?

_____ Men who are older than you

_____ Men who are younger than you

_____ Men who are about the same age as you

_____ Women who are older than you

_____ Women who are younger than you

_____ Women who are about the same age as you

4. How many of your friends now attend USC?

0-25% _____ 25-50% _____ 50-75% _____ 75-100% _____
 1 2 3 4

5. How important is it to your friends that you graduate?

Most important _____ Very important _____ Somewhat important _____ Unimportant _____
 1 2 3 4

CONTINUED

6. Here are 15 adjectives that describe the way people sometimes feel about themselves. Please check the category which best indicates how you usually feel for each adjective listed.

Don't spend a lot of time thinking about it -- just give the answer that first comes to mind.

ADJECTIVES

HOW I USUALLY FEEL

	<u>Most of the time</u>	<u>Some of the time</u>	<u>Not very often</u>
1. Calm +	_____	_____	_____
2. Secure +	_____	_____	_____
3. Worried -	_____	_____	_____
4. At Ease +	_____	_____	_____
5. Upset -	_____	_____	_____
6. Nervous -	_____	_____	_____
7. Relaxed +	_____	_____	_____
8. Content +	_____	_____	_____
9. Pleasant +	_____	_____	_____
10. Happy +	_____	_____	_____
11. Confident +	_____	_____	_____
12. Unhappy -	_____	_____	_____
13. Deperate -	_____	_____	_____
14. Disappointed -	_____	_____	_____
15. Sad -	_____	_____	_____

HOW I FUNCTION IN SCHOOL

1. How good are you at memorizing facts?

<u>Very</u> <u>good</u>	<u>Good</u>	<u>Just</u> <u>okay</u>	<u>Not very</u> <u>good</u>	<u>Poor</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

2. How good are you at writing your thoughts on paper?

<u>Very</u> <u>good</u>	<u>Good</u>	<u>Just</u> <u>okay</u>	<u>Not very</u> <u>good</u>	<u>Poor</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

3. How good are you at speaking your thoughts aloud?

<u>Very</u> <u>good</u>	<u>Good</u>	<u>Just</u> <u>okay</u>	<u>Not very</u> <u>good</u>	<u>Poor</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

4. How quickly do you learn ideas and concepts?

<u>Very</u> <u>Quickly</u>	<u>Quickly</u>	<u>About</u> <u>Average</u>	<u>Slowly</u>	<u>Very</u> <u>Slowly</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

5. Think of some ideas that you have learned in the past. How often have you used those ideas in the courses you have taken most recently?

<u>Very</u> <u>Often</u>	<u>Often</u>	<u>Sometimes</u>	<u>Seldom</u>	<u>Very</u> <u>Seldom</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

6. What I learn in classes is mostly

1 facts, such as dates, places and names.

2 ideas, such as symbolism and theories.

3 new ways of thinking about similar facts.

4 skills, how to do things.

7. How many more semesters do you expect to attend USC? _____
8. What grade (A, B, C, D, or F) do you think that the average teacher at USC would give to these students?

_____ A male student

_____ A female student

_____ A student with enough money to live comfortably

_____ A male minority student

_____ A female minority student

_____ A student who needs extra help

_____ A male anglo student

_____ A female anglo student

_____ You

9. Whether I do well or poorly in a class depends mostly on

me 1 the teacher 2 something else 3

10. Most of my teachers at USC treat me as they treat other students

Always		Sometimes		Never
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

11. My teachers are prepared to help me do a good job

Always		Sometimes		Never
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

12. My teachers compliment me when I do a good job

Always		Sometimes		Never
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

13. My teachers are patient when I don't understand something

Always		Sometimes		Never
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

14. My teachers are patient with other students when they don't understand something

Always		Sometimes		Never
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

15. My teachers make students feel unsure of themselves

Always		Sometimes		Never
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

16. How much difference does your ethnic background make to your teachers?

None	Only a little	Not sure	Some	Quite a lot
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

17. Is the situation described in number 16 an advantage or a disadvantage for you?

Advantage		Uncertain		Disadvantage
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

18. How much difference does your ethnic background make to students who belong to your ethnic group?

None	A little	Not sure	Some	Quite a lot
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

19. Is your ethnic background an advantage or disadvantage for you?

Advantage		Uncertain		Disadvantage
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

20. How much difference does your ethnic background make to students who do not belong to your ethnic group?

None	A little	Not sure	Some	Quite a lot
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

21. Is the situation described in number 20 an advantage or a disadvantage for you?

Advantage	Uncertain		Disadvantage	
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

22. How would you rate the difference your ethnic background makes to people who work in the USC student services offices?

None	A little	Not sure	Some	Quite a lot
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

23. Is the situation described in number 22 an advantage or a disadvantage for you?

Advantage	Uncertain		Disadvantage	
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

CONTINUED

STUDENT SERVICES

How often do you go to any of these USC offices for any assistance?

1 = once a week or more; 2 = twice a month; 3 = once a month; 4 = once every two months; 5 = once each semester. How satisfied are you with the assistance you usually receive?

	Satisfied	Not sure	Dissatisfied
_____ 1. Financial Aid Office	_____	_____	_____
_____ 2. Admissions Office	_____	_____	_____
_____ 3. Veterans' Office	_____	_____	_____
_____ 4. Career Development Office	_____	_____	_____
_____ 5. Career Resources Center	_____	_____	_____
_____ 6. Chaplain's Office	_____	_____	_____
_____ 7. Chicanos United for Action	_____	_____	_____
_____ 8. Bilingual Education Club	_____	_____	_____
_____ 9. Spanish Club	_____	_____	_____
_____ 10. Student Health Service	_____	_____	_____
_____ 11. Handicapped Resources	_____	_____	_____
_____ 12. Housing Offices	_____	_____	_____
_____ 13. Games Rooms	_____	_____	_____
_____ 14. Gym	_____	_____	_____
_____ 15. Vice President for Student Affairs	_____	_____	_____
_____ 16. Affirmative Action Office	_____	_____	_____
_____ 17. Student Activities Board	_____	_____	_____
_____ 18. Professional Women's Caucus	_____	_____	_____
_____ 19. Chicano Caucus	_____	_____	_____
_____ 20. Department Academic Advisor	_____	_____	_____
_____ 21. Higher Education Learning Program	_____	_____	_____
_____ 22. Counseling/Testing Center	_____	_____	_____
_____ 23. Black Student Alliance	_____	_____	_____
_____ 24. Your Department	_____	_____	_____

OFF-CAMPUS OFFICES AND RESOURCES

How often do you go to any of these offices or resources for any kind of assistance? 1 = once a week or more; 2 = twice a month; 3 = once a month; 4 = once every two months; 5 = once each semester.

How satisfied are you with the assistance you receive?

	Satisfied	Not sure	Dissatisfied
____ 1. Pueblo Senior Citizen Resource Development and Coordinating Agency	_____	_____	_____
____ 2. Family Social Services of Pueblo	_____	_____	_____
____ 3. Sacred Heart Home	_____	_____	_____
____ 4. Pueblo County Legal Services	_____	_____	_____
____ 5. Rape Crisis Center	_____	_____	_____
____ 6. Pueblo Probation Department	_____	_____	_____
____ 7. Our House	_____	_____	_____
____ 8. Spanish Peaks Mental Health	_____	_____	_____
____ 9. League of Latin American Citizens Educational Center	_____	_____	_____
____ 10. American G.I. Forum	_____	_____	_____
____ 11. Pueblo Suicide Prevention Center	_____	_____	_____
____ 12. Crisis Center	_____	_____	_____
____ 13. Mexican American Service Agency	_____	_____	_____
____ 14. Project Adelante	_____	_____	_____
____ 15. Pueblo Assoc. of Retired Citizens	_____	_____	_____

APPENDIX B

Interview Protocol For Dropouts

Subject's Name _____

Interviewer's Name _____

(Instructions to Interviewer: First, administer the survey instrument. Then ask the following questions. Don't rush the respondent. For example, if she starts talking about high school experiences, how she felt about school, etc. let her talk about it, and record the discussion as completely as possible. This is particularly true for questions 9, 10, 13, 14, 15, 16, 20, 21, 22, 26, 27, 28, 29, and 32)

Now, that you've completed the survey, I want to ask you some additional questions.

1. First of all, where were you born (i.e. what city?) _____

2. Where do you live now (i.e. what city?) _____

3. Where do your parents live (i.e. what city?) _____

4. How many brothers and sisters do you have? _____

Where do they live? _____

5. About how often do you visit with your parents? _____

How often do you visit with your brothers and sisters? _____

6. Where did you attend elementary school? Tell me the name(s) of the school(s) and the city(s) (list all that are named). _____

7. Where did you attend high school? (again, get the name(s) of the school(s) and the cities) _____

8. Did you finish high school? _____ When? _____

9. What were your best subjects in high school? _____

10. What were your worst subjects? _____

11. What was your overall GPA? _____
12. What extracurricular activities were you involved in (e.g. clubs, sports, band, etc)? _____

13. What did you particularly like about high school? _____

14. What did you particularly dislike? _____

15. Think for a minute about two or three of the closest friends you had in high school. Where are they now? What are they doing? (Interviewer: get details. If they're in school, ask where. If they're working, ask what they're doing, and so forth).
- Friend #1 _____

- Friend #2 _____

- Friend #3 _____

16. About how many of your high school friends went on to college? None of them? All? 10%? 20%? _____
About how many are still in college? _____
17. Are you attending school now? _____
(If yes) Where and what are you studying? _____
What year are you in? _____

18. Are you working? _____
(If yes) What job do you have? _____
19. I want to ask you some questions about your experiences at USC. First of all, where did you hear about attending USC?

20. How did you decide to attend in the first place? _____

21. Who encouraged you to attend? _____

22. Did anyone try to discourage you? Who? _____

23. Did you have any help filling out application forms? _____

From whom? _____
24. Did you have any problems with registration? _____
What problems? _____

25. Did you receive enough financial assistance? _____
(If no) What did you need that you couldn't afford? _____

26. While enrolled at USC, were you also employed? _____
Did this cause you any problems? _____

27. Why did you decide to enroll at USC? What did you want to get out of it? _____

28. Why did you decide to drop out? _____

29. Did you receive advisement before dropping out? _____
From whom/what department? _____

30. Did you go through the official withdrawal procedure? _____
(If no) Were you aware there was one? _____
31. Do you plan to return to USC or enroll in another institution in the future? _____ Where? _____ When? _____
32. What are your education and career goals now? _____

APPENDIX C

Descriptive And Inferential Findings

Appendix C provides descriptive and rudimentary inferential statistics for the variables measured by the primary survey instrument. Each entry has the following format:

Mean

Standard deviation

Number of observations

✓ The rightmost column gives the statistical significance level of any mean differences found in a 2 X 2, sex by ethnicity analysis of variance. If no significant difference existed, the entry is NSD. If a significant difference on ethnicity (E), sex (S) or sex by ethnicity (SXE) existed, the factor is identified and the significance level given. While these tests are not tests of formal hypotheses, and although various assumptions (e.g., independence of F-tests) are violated, we include the statistical significance levels as a quick key to locating variables with fairly large mean differences; and (since random selection was used) ^{to} the expectancy of finding them in a different sample.

The values of the following variables are reported in scales taken directly from the values given for the survey instrument (Appendix A):

Number of dependents

Age

Father's, mother's highest grade completed

Second language fluency

Adequacy of income

Friends who once attended USC (as a total of 6
sub-questions)

Percent friends now at USC

Importance of graduation from USC

The following variables were scaled to represent the metric of interest, not the code given on the survey form:

Parent's income

Student's income

Hours/week on job

The following variables are the simple sum of variables combined to form a scale:

Support from immediate family

Support from other people

Time spent with immediate family

Time spent with other people

Finally, these variables are also the simple sum of the variables used in constructing the scale, but these are adjusted for the number of items in the scale:

Adjective checklist (stress)

Self-concept as learner

Grades received by males

Grades received by females

Grades received by Anglos

Grades received by minorities

Treatment by teachers

Advantage of ethnicity

Difference made by ethnicity

Frequency of use of student services

Satisfaction with student services

Frequency of use of off-campus resources

Satisfaction with off-campus resources.

Variable	Chicanos	Male Non- Chicanos	Female Non- Chicanos	Chicanas	Dropouts	
Number of dependents	1.46 1.86 28	.88 .96 36	.63 1.01 52	.88 1.47 42	.43 .94 14	NSD
Age	15.9 7.6 28	23.6 6.1 36	24.6 9.3 52	23.2 6.2 42	22.9 4.9 14	NSD
Father's highest grade completed	8.2 4.0 21	11.2 3.0 27	10.1 2.9 29	8.9 2.8 32	10.1 3.6 12	E, P<.005
Mother's highest grade completed	9.4 2.6 25	10.9 3.0 24	11.2 1.9 38	9.3 2.9 32	10.4 2.4 14	E, P<.001
Second language fluency	3.4 1.3 21	3.1 1.5 9	2.5 1.2 25	2.8 1.5 29	2.2 1.3 5	S, P<.05
Parent's income	12,040 7,485 26	15,420 7,005 31	17,025 8,445 41	14,110 7,850 36	10,310 5,990 31	E, P<.005
Student's income	452 318 25	371 285 31	335 303 44	311 178 36	429 310 14	NSD
Adequacy of income	2.56 1.0 25	2.71 .97 34	2.65 .80 51	2.98 .77 40	2.98 .95 13	NSD
Hours/week on job	21 15 22	19 12 24	15 10.3 42	14 10.4 29	26 14 11	NSD
Support from immediate family	29.7 24.2 13	21.6 9.7 18	22.7 13.8 26	20.9 11.2 20	14.8 6.9 8	SXE, P<.07
Support from other people	89.4 23.2 9	92.3 13.4 16	85.2 18.4 25	77.4 17.7 18	89.4 23.2 9	NSD
Time spent with immediate family	38.9 28.1 9	25.9 12.5 16	26.4 11.3 27	22.2 10.8 18	16.7 4.2 9	SXE P<.01

Variable	Chicanos	Male Non- Chicanos	Female Non- Chicanos	Chicanas	Dropouts	
Time spent with other people	53.0 22.2 11	56.3 22.3 17	51.4 14.4 33	48.6 16.8 19	61.8 11.1 11	NSD
Friends who once attended USC	44.7 44.9 7	82.86 51 7	28.1 7.5 8	33.4 17.7 5	10.9 21.8 12	S, P<.001 E, P<.05
Percent friends now at USC	2.7 .9 27	2.7 1.0 35	2.5 .94 52	2.1 .94 41	2.7 .73 14	S, P<.05
Importance of graduation from USC	2.7 .9 27	2.7 1.0 35	2.5 .94 52	2.1 .94 41	2.7 .73 14	S, P<.05
Adjective checklist (stress)	1.51 .36 27	1.45 .32 35	1.49 .38 52	1.51 .31 42	1.40 .16 14	
Self concept as learner	2.4 .68 28	2.4 .77 36	2.2 .60 52	2.8 .62 42	2.45 .56 14	SXE, P<.005
Grades received by males	2.3 .62 26	2.3 .55 29	2.2 .59 40	2.1 .59 39	2.1 .64 12	NSD
Grades received by females	2.0 .56 26	2.2 .59 29	2.0 .54 40	2.1 .55 39	1.9 .5 12	NSD
Grades received by Anglos	1.7 .51 26	2.3 .71 29	2.2 .7 40	1.6 .72 39	1.5 .54 12	E, P<.001
Grades received by minorities	2.5 .71 26	2.3 .64 29	2.2 .65 40	2.6 .78 39	2.6 .79 12	E, P<.005
Treatment by teachers	2.7 .71 28	2.2 .59 32	2.4 .57 52	2.6 .53 40	2.5 .53 14	E, P<.05
Advantage of ethnicity	2.8 1.1 28	2.8 .78 31	2.9 .80 48	3.0 .71 41	3.0 .79 13	NSD

Variable	Chicanos	Male	Female	Chicanos	Chicanas	Dropouts
		Non-Chicanos	Non-Chicanos			
Difference made by ethnicity	3.0 .88 28	2.4 .78 33	2.2 .79 51	2.9 .86 41	2.7 .75 12	E, P<.001
Frequency of use of student services	5.1 .68 28	5.2 .43 36	5.3 .5 52	5.1 .63 42	5.3 .56 14	NSD
Satisfaction with student services	1.8 .29 28	1.8 .3 36	1.8 .24 52	1.8 .21 42	1.9 .16 14	NSD
Frequency of use of off-campus resources	5.7 .73 28	5.9 .25 36	5.9 .27 52	5.7 .49 42	5.9 .125 14	NSD
Satisfaction with off-campus resources	1.9 .30 28	2.0 .17 36	2.0 .20 52	1.9 .24 42	2.0 .03 14	NSD

APPENDIX D

Literature Review

A Literature Review of Chicana
University Retention and Attrition

Written for the
University of Southern Colorado Attrition Study
and the
Mid-Continent Regional Education Laboratory

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Introduction

There is a strong ethos in this country which suggests that education is a means to socioeconomic mobility and independence, especially for women and ethnic minority groups. While education may improve the social, political, and economic situation of minorities, academic achievement and educational attainment of these groups, particularly of the Chicano/Mexican American ethnic group, remain relatively low.

As evidence that Chicanos obtain relatively less education, particularly at the university level, the U. S. Commission on Civil Rights (1971) reported that in the five southwestern states, fifty-seven percent of Anglo high school graduates enrolled in college, but fewer than one-half of the blacks and only about one-third of the Mexican Americans did so. A report in the *Chronicle of Higher Education* (1975) revealed that only one in four Chicanos who entered college graduated compared to one in two Anglos. Attrition is obviously higher for Chicano students than for the general student body.

Figures which reflected the educational attainment of Mexican American women were even more dismal. The U. S. Commission on Civil Rights (1978) reported a March 1976 study which reflected that while 32% of all Mexican American males completed college, only 15% of all Mexican American females did so. The figure for Mexican American males was 68% below the rate for majority males. For Mexican American females, the figure was 85% below the college completion rate for majority females. Clearly, while both male and female Chicanos are at an educational disadvantage when compared to nonminorities, Mexican American women generally fare less well.

Numerous review^s of studies (Astin, 1971, 1977; Cope & Hannah, 1975; Pantages & Creedon, 1978; and Summerskill, 1974) have identified factors

related to academic achievement and attainment. However, few studies have been conducted to identify variables uniquely associated with the academic achievement and educational attainment of Chicano university students; and fewer have partialled out sex as well as ethnicity as an important variable.

The purpose of this investigation is thus to identify and examine factors which potentially mediate and influence persistence and attrition of Chicana university students. Variables to be reviewed include demographic variables, e.g., sex, language and culture, socioeconomic status, and geographic location and size of high school; also, academic background variables, e.g., high school grade point average, standardized tests such as ACT and SAT, high school rank and academic preparation or study skills; and finally, psychosocial variables, such as self-esteem, self-expectations and support from others.

Literature Review

This literature review will identify and discuss those variables associated with university persistence and attrition for Chicanas. For the purposes of this study, the term "Chicana" will be synonymous with Mexican American woman and is defined as a female American citizen of Mexican ancestry.

The research literature in the area of Chicana academic achievement is extremely limited. Interpreting the research pertaining to academic achievement of Mexican Americans in general is fraught with difficulties, not the least of which are the biased interpretations of data related to psychological tests of intelligence and achievement. In a review of vocational education research of minority group needs, Hamilton (1975) concluded that the research was generally based on a social pathology model of cultural deficit and on stereotypes of cultural disadvantage without identifying positive attributes. Martinez (1977) points out that "psychological formulations that adequately explain the behavior of Anglos within the Anglo culture may not necessarily explain the behavior of Chicanos within the Chicano culture" (p. 11). The concept of cultural relativism—that human behavior can be understood only if it is viewed within the cultural context in which it occurs—sensitizes people to the importance of careful interpretation of various studies.

Another issue involved with this research study and literature review is that adding new knowledge may create new stereotypes. We must remember that Mexican Americans are not a homogeneous group; Chicanos are multifaceted and can be classified in a diversity of ways. Categories are dynamic, and individuals constantly change. Thus, while group statistics are necessary for insight and understanding, one must guard against forming

stereotypes (Hernandez, 1973).

Research on college dropouts and persisters is difficult to interpret because findings are often contradictory and many studies simply investigate demographic data, or are single variable studies. Cope and Hannah (1975) note that

variables may operate concurrently as moderating, suppressing, or accentuating factors relative to academic performance, withdrawal, or other variables. That is, a given variable may be directly related, inversely related, or unrelated to other variables depending on the influence of the other unmeasured factors (p. 8).

Much of what is "known" about the college dropout and academic performance must be examined with sensitivity because the research is limited and difficult to interpret, particularly as it applies to Chicanos. Terezini & Pascarella (1978) point out that correlates of attrition are different for different people. Various studies further point out that the primary determinants of persistence are the interaction of an individual's background with the social and academic systems of an institution (Terezini & Pascarella, 1978; Spady, 1970, 1971; Tinto, 1975; Cope & Hannah, 1975). The university environment, and how it "fits" with a particular person's needs, given his/her background, seems to be an important, albeit complex, factor.

Our basic premise then is that an investigation of the background characteristics of Chicanas as well as their perception of the university's support system could provide valuable information in the development of practical measures to minimize Chicana students' chances of dropping out. Hence, the effectiveness of higher education for Chicanas may be improved if we learn more about why a large proportion of students withdraw.

Demographic Variables

This section will describe the relationship between college persistence

and (1) sex; (2) language and culture; (3) socioeconomic status; and geo-
graphical location of high school. Selected studies for Mexican American stu-
dents, and where data is available for Mexican American female students as
well as for non-Chicano students, will be discussed.

Sex. Men and women are traditionally found to differ in their educa-
tional and intellectual development (Maccoby & Jacklin, 1974). One would
assume that different needs and role expectations for men and women would
result in differences in academic performance. Cope and Hannah (1975) con-
cluded that the variable of sex in predicting withdrawal from college is a
complex one. They reported that most studies investigating sex as a variable
related to attrition found more men withdrawing than women, but when an ade-
quate followup study including reentry and transfer was conducted, only
slightly different variations in the attrition rate for men and women were
found. While women tended to graduate on schedule more often than men, men
were more likely to complete degree requirements eventually.

More information about sex differences in academic performance was re-
ported by Astin (1971, 1977). In a presentation of selectivity data for
2300 American colleges, Astin reported that women received higher grades
than men in both high school and in college. He found that the academic
performance of the female freshman surpasses that of the average male fresh-
man, even when they were matched on high school grades and aptitude test
scores. Despite their superior academic performance, women were more likely
to drop out of college after the freshman year.

Astin reported similar conclusions in his later study. He found that
although women earned higher grades than men, they were less likely to per-
sist in college and to enroll in graduate or professional school. More-
over, women's aspirations for higher degrees declined, while men's

aspirations increased during the undergraduate years.

The socialization process which often perpetuates or reinforces roles for girls and women results in a serious limitation of choices for them. Russo (1976) points out the psychological constraints that sex-role socialization, and particularly the "motherhood mandate," have on women.

Dixon (1975) points out the very real limitations that marriage and children have on the pursuit of an education. Women who were high school seniors in 1965 were interviewed in 1971. Of those who had started college, 75% of the married women with children had dropped out of school, compared with 52% of married men with children, 22% of single women, and 27% of single men.

Sex differences among Mexican Americans. Do cultural factors further restrict participation of Chicana women in higher education? Stereotyped attitudes about role definitions for women (e.g., childbearers) and role definitions for men (e.g., the "machismo" image) in traditional Latin cultures are examples of cultural factors suggested to restrict educational aspirations and levels of achievement for Chicanos. While the traditionally high value placed on LaFamilia has its positive rewards (Keefe, Padilla & Carlos, 1978), Mexican American women must experience role conflict as they attempt to balance the relative rewards and costs of marriage and children with an education and ultimately, a career.

In their study on Chicanos in higher education on four California campuses, Munoz and Garcia-Bahne (1978) found sex differences for academic performance similar to those discovered by Astin (1977). Forty-two percent of the males compared to thirty percent of the females in their sample reported that they had been on academic probation at some time. Chicanas received ^{better} superior grades than Chicanos did in high school and in college. ✓

Unfortunately, any possible sex differences in dropout rates were not reported in this particular study. Yet, figures reported earlier reflect the relatively low rates of persistence to graduation for Chicanas.

In summary, while women—both Chicana and non-Chicana—perform better academically, persistence to graduation is lower compared to men within respective ethnic groups. The social, economic and cultural factors common to all women exert great influence on educational attainment. The extent to which cultural elements influences the educational attainment of Chicanas is difficult to determine.

Language and Culture.

What are the effects of the Mexican American culture and the use of Spanish language on academic performance? Many discussions imply that identification with the values, attitudes, behaviors and language of the Chicano culture is a liability to educational achievement and that acculturation—the process of "giving up" of one's subculture and adapting to the values, attitudes and behaviors of the majority culture—should be the guiding philosophy of educational programming and interventions (Schwartz, 1969; Madsen, 1964; Heller, 1968).

Schwartz (1969), for example, examined several value orientations and their relationships with school achievement for a sample of ninth and tenth grade Mexican American pupils in the Los Angeles city schools. She found that most Mexican American pupils with value orientations most similar to those of Anglo pupils had the highest scholastic achievement. She suggested that affective factors in the cultural background of many Mexican American pupils hindered their general academic achievement.

There is controversy, however, regarding the implication that cultural factors are damaging and serve as barriers to educational attainment. The

theory of cultural deprivation and the term "culturally disadvantaged" have been used to describe Mexican Americans in relation to education and implies cultural deficit. These descriptions imply, as does Schwartz, that if acculturation occurs and minority persons are "made over" in the image of mainstream American culture, then everything will be set right (Carter, 1970; Ryan, 1971).

In a review of several studies negatively relating cultural factors to educational achievement and personality adjustment, Ramirez (1971) concludes that socioeconomic variables are central to the issue. Being "educationally disadvantaged" refers to those environmental deficiencies that are detrimental to an individual's performance in education regardless of ethnic or racial status. Low socioeconomic status, a negative family environment, and limited exposure to cultural and intellectual resources may be properly considered indications of a disadvantaged situation. However, while these conditions may be associated with a portion of the Mexican American population for economic and social reasons, they should not be construed as arising from the group's culture per se (National Board on Graduate Education, 1976; Ryan, 1971).

Language is a culturally related factor which may be a disadvantage if a child does not understand English. The relationship of bilingualism and academic achievement has been recognized as a problem by educators. The National Center for Education Statistics (1978) reported, for example, that "language-minority persons" had lower grade attainment for age and a higher dropout rate. Persons of Hispanic origin were found to be even more disadvantaged than language-minority persons in general. These findings were based on an analysis of data from the nationwide survey of income and education (SIE), conducted in the Spring of 1976 by the Bureau of the

Census. However, it is suggested by Long and Padilla (1971) that bilingualism, itself, is not the problem. Rather, additional factors result in "dual-cultural deprivation." Those "subject factors" may include educational deprivation, which is related to low socioeconomic status, which in turn is related to a large proportion of the bilingual population.

Long and Padilla (1971), recognizing that little research had concentrated on assessing the role of bilingualism in the academic achievement of college age students, surveyed successful (Ph.D. recipients) and unsuccessful (dropouts) Chicano graduate students at the University of New Mexico. They found that 94% of the successful students but only 7% of the unsuccessful students reported coming from a bilingual background; the rest reported that English was the only language in their childhood homes. Long and Padilla concluded that the finding of the high rate of bilingualism in the sample of successful Spanish American students implied that these students may have been better able to interact readily with members of both their own culture and that of the dominant American culture. They further suggest that these individuals may simply be better adjusted members of both their cultures, hence, their tendencies to be more successful. The lack of bilingual background of the unsuccessful student may reflect a tendency in the homes to reject their Spanish American background, and that ensuing conflict may lead to a general maladjustment.

The reports of several studies have, in fact, challenged the assumption that acculturation is a cure-all and that identification with one's culture is damaging (Cordova, 1969; Henderson & Merritt, 1969; Long & Padilla, 1971; Ramirez, 1971; and Ramirez & Castaneda, 1974). A new philosophy—that of cultural democracy—maintains that identification with the ethnic group is in fact a necessary ingredient of academic success and

psychological adjustment. Researchers have begun to indicate that active participation in two or more cultures may in fact provide the basis for a more flexible and sophisticated psychological adjustment (Cordova, 1969; Henderson & Merritt, 1969; Ramirez, 1977; Ramirez & Castaneda, 1974).

Cordova (1969), for example, reported that positive values and beliefs in the area of American Politics and education for sixth grade students in New Mexico (which in his study meant acculturation) were related to a general feeling of alienation and feelings that school activities were not rewarding or valuable. Furthermore, acculturation with respect to family values was found to be related to feelings of powerlessness. Cordova also found that as acculturation in the areas of family and politics increased, the achievement of urban middle class students decreased. This finding in particular challenged the notion that acculturation results in most positive academic and psychological adjustment.

Henderson and Merritt (1969) suggested that cultural pluralism was more advantageous to educational success than acculturation. They tested mothers of preschool children from Arizona who had been selected for potential success in school through previous testing. They found that mothers of the children who showed high potential had participated in both Chicano and Anglo sociocultural systems and also scored higher on a test of Spanish vocabulary than the mothers of low potential children. They concluded that high potential families participated in both Anglo and Mexican American cultures and refuted the assumption that families that are strongly identified with traditional Mexican American outlooks and behaviors have difficulties in school.

In summary, while some studies imply that Chicano culture and use of the Spanish language are barriers to educational attainment (Schwartz, 1969;

National Center for Education Statistics, 1978), others propose a positive relationship between a bilingual bicultural identity and academic success, psychological adjustment and social flexibility (Long & Padilla, 1971; Cordova, 1969; Henderson & Merritt, 1969; Ramirez & Castaneda, 1974). Other factors, such as low socioeconomic status resulting in limited exposure to cultural and intellectual resources, may partially account for low academic performance and attainment of Mexican American men and women.

Effects of Socioeconomic Status on Academic Performance of Chicanas.

A large portion of the Mexican American population falls in the lower social class (Carter, 1972; U. S. Commission on Civil Rights, 1971). Mexican American women in general are at the lowest levels of occupational, educational and financial indices (Vasquez, 1978; Vasquez, 1979). Social mobility is often impaired for the Mexican American parents because of economic instability resulting from the manual or semi-skilled work in which many must engage. Mexican Americans often encounter restrictions in employment, educational opportunities, housing and health facilities (Hernandez, 1973). One would then expect that social and economic factors might partially account for the overall lower level of educational attainment for Mexican American students, as implied earlier in this review.

Various indices of social class and their relationship to academic performance have been investigated. Socioeconomic status (SES) as measured by parents' education, occupation and income mediates a large number of academic values, attitudes, opinions and patterns of behavior. The ^{studies} findings frequently reported that the lower the level of parental education, occupational position and income, the lower the academic performance. Students from higher SES tend to obtain higher grades and persist in college (Astin, 1971, 1975; Astin, Astin, Bisconti, & Frankel, 1972; Cope & Hannah,

1975; Pantages & Creedon, 1978; Vasquez, 1978).

Vasquez (1978), for example, examined factors which influenced and mediated grade point average, persistence and attrition of Chicana and Anglo University of Texas women. The results of a discriminant analysis showed that socioeconomic status was one of three major variables which contributed to differences between the "successful" and "nonsuccessful" groups. Descriptive data showed that both Anglo and Chicana students who were persisters also had higher parental educational, occupational and income levels. For the total sample, Chicanas generally reflected lower SES levels than Anglo women.

The process of socialization means that children acquire many of the hopes and expectations of their parents within the social class; they also acquire verbal and auditory skills which have an effect on their ability to adjust to the academic and social demands of college (Anderson & Johnson, 1968; Cope & Hannah, 1975). Poverty causes stress, particularly in the family structure which has been cited to be the most important facet of life for Chicanos (Cuellar & Moore, 1970). One might conclude severe limitations in the development of predispositions, habits, knowledges and experiences that promote academic achievement for Mexican American students (Hernandez, 1973). Yet, in a review of two studies, Hernandez concludes that SES is not as significant a predictor for achievement for Mexican American students as for the general population. In an extensive study of Chicanos at four California universities, Munoz and Garcia-Bahne (1978) found no significant differences between college grade point average and socioeconomic standing of the family. In a study investigating the sociocultural determinants of Mexican American high school students, Anderson and Johnson (1968) found that when achievement motivation was controlled,

the previously discovered relationship between SES and grades almost disappeared. These studies suggest that while social indices do relate to academic performance, other factors, such as motivation, tend to mediate.

In summary, while it seems that the academic performance of many students is adversely affected by factors associated with low SES (e.g., different academic values, attitudes, patterns of behavior), other students prevail despite those negative associations. Perhaps the ambition to better oneself mediates the usual disadvantaged situation of the Chicana student from the low SES family.

Financial situation. Financial situation has a greater impact on Chicano students than on majority students. The U. S. Bureau of the Census (1970) reports that Mexican American families earn about 70% as much income as nonminority families do (Table 266, U. S. Bureau of the Census). In a comprehensive study, the National Board on Graduate Education (1976, pp. 77-81) reported that Chicanos anticipate a much lower median parental contribution toward the cost of college (\$194 per year) compared to White students (\$1,145 per year). These figures are alarming in view of the fact that Astin (1975) concluded that receiving support from parents for college expenses generally enhances the student's ability to complete college (except for women from high income brackets).

While Munoz and Garcia-Bahne (1978) found no differences between college grade point average and socioeconomic status (using parental educational and occupational levels), they did find a negative relationship between family income and dropping out of school. Low family income had a detrimental effect on the Chicano college student's chances of completing college.

Financial concerns do indeed predominate as major problem areas for

minority students, as evidenced by preliminary reports of a needs assessment conducted at the University of Texas (Baron, Valdez, Vasquez, & Hurst, 1978), and one conducted at Colorado State University (Vasquez & Banning, 1979). Baron et al, and Vasquez & Banning reported that the area of greatest concern to minority students was that of finances. For the Texas study, those students reporting inadequate income also reported significantly higher mean concerns for 58 of the 63 items on the survey. The extent to which financial aid and other student assistance programs have compensated for disparities in financial circumstances remains unclear. As indicated previously, minorities place greater reliance on scholarships, workstudy programs and loans in financing their undergraduate education in contrast to nonminority students, who receive more parental assistance. The way in which various types of financial aid ^a effects student performance was investigated by Astin (1975). He concluded that scholarships or grants are associated with small increases in student persistence rates; participation in workstudy programs also appears to enhance student persistence. Reliance on loans, on the other hand, is associated with decreased persistence among men in all income groups while the effects are highly variable among women. Reliance on savings or other assets also appears to decrease the student's chances of finishing college.

Geographic location and size of high school. A student's hometown location and size are also factors in academic performance. In a review of three studies, Summerskill (1974) concluded that higher attrition rates were found among students from rural homes than among students from cities or towns. Astin (1975) and Cope (1972) found that growing up in a small town was most consistently related to dropping out. "Out of state" students were "underachievers;" students from cities with populations over

100,000 were "overachievers." However, in their review of several studies, Cope and Hannah (1975) found conflicting results: some studies indicated that school size makes no difference, or that students from smaller high schools do better in college, whereas others showed that students from larger, more urban high schools performed better.

The location and size of home communities in themselves probably do not determine a student's academic performance. Yet, variation in quality of secondary schools and in the number and range of the cultural and educational activities among different cities and towns may be influential. The "culture shock" phenomenon may account in part for the difficulty many students from rural areas seem to encounter, especially at large universities. Astin (1975) and Cope and Hannah (1975) concluded that the "fit" between the size of the student's hometown and the college is important to student academic performance, particularly persistence.

Academic Variables

Relationship of Academic Background to Academic Performance of Mexican Americans.

Very few studies have attempted to investigate the possible differential relationship of academic variables to such criteria as college grade point average and persistence for Mexican American students. The few studies that have been completed report dissimilar and occasionally contradictory results, possibly due to differences in methodology, selected variables and populations (Goldman & Richards, 1974; Goldman & Hewitt, 1976; Thomas & Stanley, 1969; Sedlacek & Brooks, 1976; Dalton, 1974 and Cole & Hanson, 1973).

In two studies, Goldman and Richards (1974) attempted to predict

college grade point average using the Scholastic Aptitude Test (SAT) for Mexican American students at the University of California, Riverside. They hypothesized that the SAT would predict differently for Mexican American and Anglo groups. Both studies indicated that when prediction of college grade point average from SAT was based upon an Anglo American regression equation, the grade point average of Mexican American students, as a group, was somewhat overpredicted: that is, grade point averages were lower than predicted by SAT. When separate equations were calculated for each subgroup, SAT was almost as predictively accurate for Mexican American students as it was for Anglo American students.

A later more comprehensive study (Goldman & Hewitt, 1976) found that the accuracy of college grade point average prediction by the combined use of high school grade point average and SAT scores was considerably weaker for Black and Chicano students than for White and Oriental students. Goldman and Hewitt concluded that

if a given predicted grade point average were used to select college applicants, then proportionately fewer Black and Chicano applicants would be admitted than would actually surpass this grade point average criterion (p. 116).

In discussions regarding the efficacy of the use of academic background, e.g., high school grades and admission test scores for college admission for minorities, many point out that errors of prediction do indeed work disproportionately against minority groups. Thomas and Stanley (1969) and Sedlacek and Brooks (1976), for example, are critical of the methodology of those studies which do find the traditional predictors valid for Blacks since minority students attracted to higher education tend to be relatively homogeneous and unrepresentative of the larger number of minority students with the potential to do college work.

To investigate this issue, Dalton (1974) studied relative predictive

validities of high school rank and SAT scores for a group of minority students where the predictor variable distributions were not restricted in range. Her sample consisted of 169 Blacks, 17 Mexican or Puerto Rican descent and 15 Whites who had been admitted to Indiana University under a special program that waived the normal entrance requirements. She found that while high school achievement is a less effective predictor of college grades for minority students than for nonminorities, high school achievement appeared to be a better predictor ($r=.20$, $p<.05$) than was the SAT ($r=.06$) for minorities. Caution must be taken in generalizing these results to Mexican American students since such a small group of Mexican American students were included in the sample.

Dalton's finding was in contrast to that by Thomas and Stanley (1969) who found that SAT was a better predictor of academic success for minority students than was high school achievement. Cole and Hanson (1973) also concluded that, for minorities, such tests as the ACT were better predictors of college grades than were high school grades. They investigated biases in the uses of the ACT and other aptitude tests for Black and Mexican American groups. In addition, however, they reported that while ACT scores and high school grades are in most cases good predictors of college grades for minority students, the multiple correlations were not as high as for majority students [.37 to .45 on the average for minorities compared to .51 to .54 for majority students (pp. 128-129, 239-253)].

Astin, Astin, Bisconti and Frankel (1972) investigated the persistence and achievement of "disadvantaged students" at nineteen institutions. The study indicated that students who made good grades in high school tended to persist and received relatively better grades in college. Unfortunately, differences among minority groups on these academic criteria were not

reported, hence, specific findings for Mexican American students were not available.

The extent of academic preparation for Chicanos is another issue which should be explored. Mexican American students in general, and women in particular, are often "tracked" into taking non-college preparatory courses. The National Academy of Sciences (1977) made visits to 29 engineering campuses with active programs to increase minority student enrollment, and found insufficient preparation in mathematics and the physical sciences as one of several reasons for attrition among minority engineering students. Basic study skills are often lacking in minority students who otherwise have the academic potential to succeed in higher education.

In summary, academic background including high school grade point average, college admissions test scores, and rank in high school graduating class traditionally has been found to be significantly related to and predictive of college grade point average and persistence and attrition in college.)

no R However, studies exploring the relationship of these variables to grade point average and persistence for Chicanos yield contradictory results. These contradictory results may be due to differences in methodology, analyses, and populations. Generalizing from such results is obviously difficult.

no R There is a tendency for academic background variables to have some predictive power for academic success of Mexican American students, although the relationship is not as consistently strong for the Chicano subpopulation as for the Anglo American group. Lack of academic preparation, such as the acquisition of basic study skills and/or preparations for a major field of study may also deter from the success of Chicana students.

Psychosocial Variables

Self-expectations and self-esteem.

Cope and Hannah (1975) tentatively concluded that personal commitment either to an academic or occupational goal was one of the single most important determinants of persistence in college. They believed, for example, that the commitment to finish college resulting from the motivational climate of the family was far more important than having enough money. The literature is conflicted¹⁹ regarding the aspirations, expectations and motivational climate for Mexican Americans and their families to attend college. Some studies reported low educational aspirations and expectations (Heller, 1968; Madsen, 1964); others suggested that aspirations and expectations were just as strong for Mexican American students and their parents as for their Anglo counterparts when socioeconomic status and educational circumstances were controlled (Ulibarri, 1968; Anderson and Johnson, 1968). A study by Moerk (1974) found that while aspirations were high, expectations to attend college in reality were relatively lower.

One of the most recent studies on Chicanos in higher education by Munoz and Garcia-Bahne (1978) found that 55% of the Chicano students in their sample from four California universities began thinking of attending college during the tenth grade or later, and over 26% did not consider the possibility until twelfth grade or later. In contrast the vast majority of Anglo students had planned to attend college during their elementary or junior high school years. This finding implied differences in the development of aspirations and expectations to attend college.

In order to have positive expectations for oneself, one must first experience positive feelings and perceive oneself to be skillful in interacting in the Anglo world, such as the generally all-White institutions of

higher education. Self-esteem and one's image is developed primarily from two sources: (1) feedback about one's personal worth and competence, and (2) ~~from~~ cultural feedback about the legitimacy of a person's primary reference group (Zimbardo, 1979).

It is not surprising, then, that actual expectations for Chicanos in general may be lower and, that the development of expectations to attend college occurs later. Clearly, it is crucial that Mexican American women with potential to succeed in college receive strong doses of encouragement from parents as well as other significant people in their lives, such as teachers, in order to deter the negative messages from society about their primary reference group. Overt as well as covert, subtle patterns of prejudice and discrimination often result in negative internalized messages about one's general worth as a woman, as a member of an ethnic minority group, and in most cases, as a member of the low economic group in this country.

First generation Chicana college students in particular must inoculate themselves against the crippling effects of being a "triple minority" by establishing a sense of pride in their origins, history, ^{and} group identity, as well as in their abilities. Parents and teachers have been found to be influential. Using a discriminant analysis to determine the variables that best discriminated between the "successful" and "nonsuccessful" groups of Chicana university students, Vasquez (1978) found that "mother encouragement to do well in school" was one of the most important.

In a study evaluating the effects of school desegregation by court ordered busing on the subsequent dropout rate of majority and minority students, Felice and Richardson (1976) found that the more favorable expectations of teachers at higher socioeconomic climate schools produced lower minority dropout rates.

The National Academy of Sciences (1977) conducted a study of retention of minority students in engineering and reported that the amount of personal contact among students, faculty, and staff was an important variable in a retention program.

In summary, given the oppression that Mexican American women experience as a "triple minority," self-expectations and self-esteem may be relatively low, or at best, develop more positively at a later time than most non-Chicana students. These negative effects can be mediated by positive contact, support, and encouragement from parents, teachers, and other significant individuals in their lives.

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